

(In the second paragraph on page 2 of the above-identified Office action, claims 1 and 7-9 have been rejected as being anticipated by *Summerfelt et al.* (US 5,566,045) under 35 U.S.C. § 102.

In the fourth paragraph on page 2 of the Office action, claims 1, 3-5 [3, 5] and 7-12 have been rejected as being anticipated by *Kawakubo et al.* (US 5,691,219) under 35 U.S.C. § 102.

In the *Response to Arguments* in item 2 on page 4 of the Office action, the Examiner maintains "that gallium is a transitional element". In the *Response to Arguments* in item 3 on page 4 of the Office action dated October 23, 2001, the Examiner stated that: "Applicants argue that gallium is not a transitional element as shown in definition of "transition element" from the *ENCYCLOPEDIA BRITANNICA*. In response, it is noted that *ENCYCLOPEDIA BRITANNICA* is a general dictionary and not a technical dictionary. It is known in the art that Ga is a transitional element."

(Applicant maintains that gallium is **not** a transitional element. Enclosed are copies of the relevant pages of the chemical standard work *Main Group Chemistry* (please note the title and that Ga is within the subject-matter of *Main Group Chemistry*). In particular, the Examiner is directed to page 55 of *Main Group Chemistry* stating that "Group IIIB (... Ga ...)

would then become Group 13 because of the intervening transition metals in Groups 3-12." Enclosed are also copies of the relevant pages of the *Concise Encyclopedia of Science & Technology*. In particular, the Examiner is directed to the periodic table shown on page 827 of *Concise Encyclopedia of Science & Technology* clearly illustrating that Ga is not categorized under the heading "Transition Elements" but under the heading "[group] III".

In the *Response to Arguments* in item 2 on page 4 of the Office action, the Examiner stated that: "Applicants argue that the concentration of phosphorous atoms used as a dopant for a plug is far too low to create a TiP barrier layer. In response, the arguments of counsel cannot take the place of evidence in the record." In view of the Examiner's response, enclosed is a *Declaration under 37 C.F.R. § 1.132* declaring that "the concentration of phosphorous atoms used as a dopant for a plug is far too low to create a TiP barrier layer in case only titanium and no additional phosphorous atoms are present."

Counsel telephoned the Examiner on September 26, 2002, and discussed with the Examiner the above-noted declaration. Counsel's understanding of the telephone conversation with the Examiner is that the Examiner will consider the declaration.

For a more detailed discussion of the invention of the instant application, the applied prior art and how the invention of the instant application differs from or distinguishes over the applied prior art, the Examiner is respectfully directed to the arguments brought forth in the previous response.

Consequently, it is believed that neither *Summerfelt et al.* nor *Kawakubo et al.* show a barrier layer formed from a transition element and a material selected from the group consisting of phosphorus, sulfur, and arsenic as recited in claim 1 of the instant application.

In view of the foregoing, reconsideration and allowance of claims 1, 3, 5 and 7-12 are solicited.

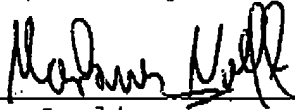
In the event the Examiner should still find any of the claims to be unpatentable, the Examiner is respectfully requested to telephone counsel so that, if possible, patentable language can be worked out. Enclosed with this response on a separate sheet is a "conditional" *Notice of Appeal*. The *Notice of Appeal* should be entered if this response does not place the application in condition for allowance.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section

1.136(a) in the amount of \$ 110.00 in accordance with Section
1.17 is enclosed herewith.

Please charge any other fees which might be due with respect
to Sections 1.16 and 1.17 to the Deposit Account of Lerner and
Greenberg, P.A., No. 12-1099.

Respectfully submitted,


For Applicant

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MN:cgm

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